

**IN THE DRAWINGS**

A replacement sheet for FIG. 2E is attached in the Appendix that follows page 11 of this paper. The replacement sheet shows that the selective epitaxial silicon layer 68 is thick enough to cover the insulating mask layer pattern 54, as described on page 5, lines 30-32 of the specification.

### REMARKS

Claims 8-11 and 21-28 are allowed. Claim 14 is amended. Claims 29-31 are new. No new subject matter is added. Reconsideration and allowance of claims 8-31 is requested in light of the following remarks.

#### *Claim Objections*

Claim 14 is amended to correct the error identified by the examiner.

#### *Drawings*

FIG. 2E is objected under 37 CFR 1.83(a) for allegedly failing to show that "the selective epitaxial layer 68 is thick enough to cover the insulating layer mask patterns 54 of the wirings 55," as described in the specification at page 5, lines 30-32 (emphasis in original).

Accordingly, a replacement sheet for FIG. 2E is submitted that shows the selective epitaxial layer 68 is thick enough to cover the insulating mask patterns 54 of the wirings 55.

#### *Allowable Subject Matter*

Claims 8-11 and 21-28 are allowed.

Claims 18-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

At this time, the applicant wishes to maintain claims 18-20 in their present form so that the comments presented below may be fully considered.

#### *Claim Rejections - 35USC § 102*

Claims 12 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,030,894 to Hada, et al. ("Hada"). The applicant disagrees.

Claim 12 recites both an insulating mask layer pattern and mask patterns having bar shapes. It is alleged that Hada's silicon oxide film caps 212 (FIG. 6A; column 13, line 41) teaches both of these recited features.

To the contrary, the words of claim must be given their plain meaning unless the applicant has provided a clear definition in the specification. MPEP 2111.01. Although the recited "insulating mask layer pattern" and "mask patterns having bar shapes" use similar words, the claim language can leave no doubt that "insulating mask layer pattern" and "mask patterns having bar shapes" are intended to be distinct, separate elements. If this were not so, the applicant submits that the claim language would recite only "insulating mask layer

pattern” or “mask patterns having bar shapes,” as the presence of the other, different element would be unnecessary. All words in a claim must be considered when judging the patentability of that claim against the prior art. MPEP 2143.03.

Furthermore, any interpretation that is adopted for pending claims must always be consistent with the specification. MPEP 2111. The specification (see, e.g., page 4, line 27 to page 5, line 12) makes it clear that the “insulating mask layer pattern” and the “mask patterns having bar shapes” are distinct, separate elements. Reading a claim in light of the specification has been explicitly approved in order to interpret limitations that are explicitly recited in the claim. MPEP 2111. In this case “insulating mask layer pattern” and “mask patterns having bar shapes” are explicitly recited in the claim, and interpreting them to be shown by a single feature of the prior art is impermissibly inconsistent with the specification.

For at least the above reason, Hada fails to anticipate claim 12 because it does not show the identical invention in as complete detail as contained in the claim. MPEP 2131.

Furthermore, claim 12 recites that the at least two self-aligned contact pads contact the substrate between the wirings. Among Hada’s alleged self-aligned contact pads (216a, 216b, 255a, 255b), only 255a and 255b are in contact with the substrate between the wirings (FIG. 6A).

Claim 12 further recites partially etching the interlayer dielectric layer to form a contact hole that exposes one of the at least two self-aligned contact pads. It is alleged that the contact hole 232 shown by Hada’s FIG. 6E teaches this feature. To the contrary, the contact hole 232 does not expose the alleged self-aligned contact pads 255a, 255b (FIG. 6E). Rather, the contact hole 232 appears to be exposing the 257a, 257b layers, which were previously alleged to be the recited selective epitaxial silicon layers (FIGs. 6C-6E).

For this additional reason, Hada fails to anticipate claim 12 because it does not show the identical invention in as complete detail as contained in the claim. MPEP 2131.

Claim 17 depends from claim 12, and inherently contains the features of claim 12. Consequently, Hada fails to anticipate claim 17 for at least the same reason it fails to anticipate claim 12. MPEP 2131.

Furthermore, claim 17 recites that the contact hole is formed to have a line shape so that the one of the at least two self-aligned contact pads and another self-aligned contact pad arranged in a direction substantially parallel to the wirings are simultaneously exposed through the contact hole. Thus, claim 17 requires that two self-aligned contact pads are both exposed by the same contact hole.

It is alleged that Hada’s contact hole 232 as illustrated in FIG. 6E discloses the above feature of claim 17. To the contrary, Hada’s FIG. 6E illustrates that every contact hole 232

exposes only a single layer 257a. Furthermore, it must be remembered that Hada's layers 257a were alleged to be the recited selective epitaxial silicon layers. Thus, Hada's contact hole 232 also fails to expose the alleged self-aligned contact pads 255a (FIG. 6E).

For these additional reasons, Hada fails to anticipate claim 17 because it fails to show the identical invention in as complete detail as contained in the claim. MPEP 2131.

### *Claim Rejections - 35 USC § 103*

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art [FIGs. 1A and 1B; Specification, pages 1-3, hereafter "APA"] in view of Hada. The applicant disagrees.

With regard to claim 12, it is recognized that APA fails to disclose the recited feature of forming a selective epitaxial silicon layer on the one of the at least two self-aligned contact pads to cover the insulating mask layer pattern.

Hada FIG. 5A allegedly teaches that a selective epitaxial silicon layer 217a is formed on the one of the at least two self-aligned contact pads 255a to cover the insulating mask layer pattern 212.

However, claim 12 also specifies that the selective epitaxial silicon layer be formed at a certain time relative to other features recited in claim 1. For example, it is apparent that the recited interlayer dielectric layer must first be formed before it can be partially etched to form a contact hole that exposes "one of the at least two self-aligned contact pads." Furthermore, it is apparent that the selective epitaxial layer must be formed subsequent to the formation of the contact hole in order for it to be formed on "the one of the at least two self-aligned contact pads" that was previously exposed by the contact hole. Otherwise, the act of partially etching the interlayer dielectric layer to form the contact hole exposing the self-aligned contact would destroy the previously existing selective epitaxial layer, which is an interpretation of the claim that is improper because it is inconsistent with the specification. MPEP 2111.

Since claim 12 indicates that the interlayer dielectric layer is formed before the contact hole, and further indicates that the contact hole must be formed before the selective epitaxial layer, it logically follows that claim 12 also indicates that the interlayer dielectric layer is formed before the selective epitaxial layer.

However, this is exactly the opposite of what Hada teaches. Hada explains that the first interlayer insulator film 221 is formed *after* the n-type single crystal silicon layer 217a is formed (FIG. 6D; column 15, line 50 to column 16, line 19; emphasis added).

For the reasons outlined above, Hada fails to teach the feature of forming a selective epitaxial layer at the appropriate time relative to other features recited in claim 12. APA says nothing about the relative timing selective epitaxial layer, since it fails to teach the selective epitaxial layer at all.

Consequently, the APA/Hada combination fails to establish *prima facie* obviousness for claim 12 because it does not teach or suggest all the features of the claim. MPEP 2143.03.

Claims 13-17 are also allowable over the APA/Hada combination at least because any claim that depends from a nonobvious independent claim is also allowable. MPEP 2143.03.

#### *New Claims 29-31*

Claim 29 depends from claim 12, and the features of claim 29 are fully supported by the original application at, e.g., FIG. 2A.


Claim 30 depends from claim 12, and the features of claim 20 are fully supported by the original application at, e.g., FIG. 2E.

Claim 31 depends from claim 30, and the features of claim 31 are fully supported by the original application at, e.g., page 5, lines 30-32.

#### *Conclusion*

For the above reasons, reconsideration and allowance of claims 8-31 is requested. Please telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,  
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Byung-Jun PARK, et al.  
SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING THE SAME  
Attorney Docket No. 2522-44/Application No. 10/688,017  
1/1  
Annotated Sheet Showing Changes

FIG. 2E

